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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,081	12/11/2003	Jingyue Ju	0575/68576-A/JPW/AJM/BJA	1586

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EXAMINER	
STAPLES, MARK	
ART UNIT	PAPER NUMBER
1637	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/735,081	JU ET AL.	
	Examiner	Art Unit	
	Mark Staples	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/18/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3, 7-11,13,14,17,18,33-35, 39, 41, 43, 44, and 47* is/are pending in the application.

4a) Of the above claim(s) *1-3,7-11,13,14,17 and 18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33-35, 39, 41, 43, 44, and 47* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 December 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *06/03/2004 & 09/10/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☒ Other: *Notice to Comply*.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 33-35, 39, 41, 43, and 44 of Group II and species of Group II in the reply filed on 12/18/2006 is acknowledged. The traversal of group restriction is on the ground(s) that that the groups are independent and distinct. Further traversal is on the ground that Groups II and III are both drawn to methods of coupling a biomolecule to a solid surface, whereas Group I is drawn to methods of coupling two biomolecules together.

Applicant's arguments with respect to Group I and Groups II and III are not deemed persuasive. The method steps of Group I are not coextensive with methods steps of Groups II and III. Thus there would be a serious search burden to examine Group I together with Groups II and III.

Applicant's election of the species of nucleic acid biomolecule, solid surface of plastic, and solid surface being a bead in the reply filed on 12/18/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the species requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The species requirement and the requirement for restriction between Group I and Groups II and III are still deemed proper and is therefore made FINAL.

Applicant's arguments with respect to Group II and claim 47 of Group III are deemed persuasive. The methods require both an azido and an alkynyl group to affix a biomolecule to s solid phase. Applicant argues that having the azido group on the solid phase is an obvious variant of having the alternate alkynyl group on the solid phase, as both groups are required for the method reaction. It is a matter of switching which group is on the solid phase and which is on the biomolecule, and either configuration results in affixing the biomolecule to the solid phase. Applicant's argument is found persuasive. And it is noted that prior art to the patentability of one of these two inventions may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Claims 1-3, 7-11, 13, 14, 17, and 18 of Group I are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 12/18/2006.

In summary, claims 33-35, 39, 41, 43, 44, and 47 will be fully examined for patentability.

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a

separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

3. The use of the trademark JUMP START™ has been noted in this application. It and any other trademarks should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Sequence Rules Compliance

4. This application contains sequence disclosures that are encompassed by the definitions for nucleotide and/or amino acid sequences set forth in 37 C.F.R. § 1.821(a)(1) and (a)(2). However, this application fails to comply with the requirements of 37 C.F.R. §§ 1.821-1.825 for the reason(s) set forth on the attached Notice To Comply With Requirements For Patent Applications Containing Nucleotide Sequence And/Or Amino Acid Sequence Disclosures. Applicant must comply with the requirements of the sequence rules (37 CFR 1.821 - 1.825) before the application can be examined under 35 U.S.C. §§ 131 and 132.

Applicant is given time of reply to this office action within which to comply with the sequence rules, 37 C.F.R. §§ 1.821-1.825. Failure to comply with these

requirements will result in **abandonment** of the application under 37 C.F.R. § 1.821(g). Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 C.F.R. § 1.136. In no case may an applicant extend the period for response beyond the six month statutory period. Direct the response to the undersigned. Applicant is requested to return a copy of the attached Notice to Comply with the response.

Page 15 and Figures 1, 3, 5, and 11 respectively contain sequences without SEQ ID NOs. If these sequences are included in the sequence listing provide by Applicant, the specification should be amended to include the SEQ ID NOs. The sequences in figures should be identified by SEQ ID NOs either in each Figure itself or in the respective description of each figure in the Brief Description of the Figures. If these sequences were not included in the sequence listing filed 10/15/2004, Applicant should provide a substitute sequence listing and a CRF that include those sequences.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 33-35, 39, 41,and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolb et al. (April 2002, cited on the Information Disclosure Statement, IDS) and Konrad et al. (US Patent No. 5,789,167, issued 1998).

Kolb et al. do not specifically teach linking biomolecules to a solid surface or where the solid surface is plastic beads.

Kolb et al. do not specifically teach DNA as the biomolecule.

Regarding claims 33 and 47, Kolb et al. teach a method of a 1,3-dipolar cycloaddition reaction between azido and alkynyl groups, thereby covalently linking two molecules together (entire reference, especially 3rd sentence on p. 2012: "Indeed, the azide + acetylene → triazole version of Huisgen's [2 + 3] cycloaddition family of processes is about as good as a reaction can get").

Regarding claims 33, 34, and 47, Kolb et al. teach biomolecules and where the biomolecule is a nucleic acid (se Abstract).

Konrad et al. do not teach a method of a 1,3-dipolar cycloaddition reaction between the azido and alkynyl groups.

Regarding claims 33-35, 39, 41,and 47 Konrad et al. teach where the biomolecule is nucleic acid and is DNA (see title for oligonucleotides on large DNA molecules) and teach where the DNA oligonucleotides are covalently bound to plastic beads (entire patent, claims 1-4, and for an example of the covalent binding see column 28 line 44 through to column 29 line 29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the method of Kolb et al. by immobilizing DNA on plastic beads as suggested by Konrad et al. with a reasonable expectation of success. The motivation to do so is provided by Konrad et al. who teach: "The method can be used for mapping, for identity typing, and to determine whether a test oligonucleotide sequence is present in the sample" (see next to last sentence in the Abstract). Thus, the claimed invention as a whole was *prima facie* obvious over the combined teachings of the prior art.

7. Claims 43 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolb et al. and Konrad et al. as applied to claim 33 above, and further in view of Lewis et al. (March 2002, cited on the IDS).

Kolb et al. and Konrad et al. teach as noted above.

Kolb et al. and Konrad et al. do not specifically teach conditions of room temperature or using a catalyst.

Regarding claim 43, Lewis et al. teach a method wherein the conditions permitting a 1,3-dipolar cycloaddition reaction to occur comprise contacting at room temperature (see p. 1054, 1st sentence for performing the cylcoaddition reaction: "Each of the possible binary mixtures was incubated in the presence of Electrophorus AChE [acetylcholinesterase, an enzyme catalyst] at room temperature" and see Figure 1 for enzyme versus thermal reactions.

Regarding claim 44, Lewis et al. teach a method further comprising contacting in the presence of the agent, cucurbituril, which catalyzes a 1,3-dipolar cycloaddition reaction (see p. 1053, 1st paragraph, last sentence).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the methods of Kolb et al. and Konrad et al. by performing the reaction at room temperature and or in the presence of a catalyst as suggested by Lewis et al. with a reasonable expectation of success. The motivation to do so is provided by Lewis et al. who in screening for positive enzyme inhibitors teach that "We anticipate that "false positives" will be relatively rare in the "in situ" [room temperature enzymatic approach] approach" (see p. 1055, last sentence of 1st column). Thus, the claimed invention as a whole was *prima facie* obvious over the combined teachings of the prior art.

8. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kolb et al. and Konrad et al. as applied to claim 33 above, and further in view of Jen et al. (2000).

Kolb et al. and Konrad et al. teach as noted above.

Kolb et al. and Konrad et al. do not specifically teach using a catalyst.

Regarding claim 44, Jen et al. teach using organic catalysts for 1,2-dipolar cycloadditions (entire reference, especially Title, 1st paragraph, and Table 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to modify the methods of Kolb et al. and Konrad et al. by using an organic catalyst as suggested by Jen et al. with a reasonable expectation of success. The motivation to do so is provided by Jen et al. who teach: ". . . the operational and economical advantages associated with organocatalysis . . ." (see 1st sentence of 2nd paragraph on p. 9874). Thus, the claimed invention as a whole was *prima facie* obvious over the combined teachings of the prior art.

Conclusion

9. Claims 33-35, 39, 41, 43, 44, and 47 are not free of the prior art.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Staples whose telephone number is (571) 272-9053. The examiner can normally be reached on Monday through Thursday, 9:00 a.m. to 7:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (571) 272-0782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Mark Staples MS
Examiner
Art Unit 1637
February 8, 2007

KENNETH R. HORLICK, PH.D
PRIMARY EXAMINER

2/12/07

Notice to Comply	Application No. 10/735,081	Applicant(s) JU ET AL.	
	Examiner Mark Staples	Art Unit 1637	

NOTICE TO COMPLY WITH REQUIREMENTS FOR PATENT APPLICATIONS CONTAINING NUCLEOTIDE SEQUENCE AND/OR AMINO ACID SEQUENCE DISCLOSURES

Applicant must file the items indicated below within the time period set the Office action to which the Notice is attached to avoid abandonment under 35 U.S.C. § 133 (extensions of time may be obtained under the provisions of 37 CFR 1.136(a)).

The nucleotide and/or amino acid sequence disclosure contained in this application does not comply with the requirements for such a disclosure as set forth in 37 C.F.R. 1.821 - 1.825 for the following reason(s):

☒ 1. This application clearly fails to comply with the requirements of 37 C.F.R. 1.821-1.825. Applicant's attention is directed to the final rulemaking notice published at 55 FR 18230 (May 1, 1990), and 1114 OG 29 (May 15, 1990). If the effective filing date is on or after July 1, 1998, see the final rulemaking notice published at 63 FR 29620 (June 1, 1998) and 1211 OG 82 (June 23, 1998).

☐ 2. This application does not contain, as a separate part of the disclosure on paper copy, a "Sequence Listing" as required by 37 C.F.R. 1.821(c).

☐ 3. A copy of the "Sequence Listing" in computer readable form has not been submitted as required by 37 C.F.R. 1.821(e).

☐ 4. A copy of the "Sequence Listing" in computer readable form has been submitted. However, the content of the computer readable form does not comply with the requirements of 37 C.F.R. 1.822 and/or 1.823, as indicated on the attached copy of the marked -up "Raw Sequence Listing."

☐ 5. The computer readable form that has been filed with this application has been found to be damaged and/or unreadable as indicated on the attached CRF Diskette Problem Report. A Substitute computer readable form must be submitted as required by 37 C.F.R. 1.825(d).

☐ 6. The paper copy of the "Sequence Listing" is not the same as the computer readable from of the "Sequence Listing" as required by 37 C.F.R. 1.821(e). The correct SEQ ID NO:2 is present in the paper copy of the of the sequence listing only. Therefore a search of the correct sequence is not possible.

☒ 7. Other: See Office Action.

Applicant Must Provide:

☐ An initial or substitute computer readable form (CRF) copy of the "Sequence Listing".

☐ An initial or substitute paper copy of the "Sequence Listing", **as well as an amendment specifically directing its entry into the application.**

☐ A statement that the content of the paper and computer readable copies are the same and, where applicable, include no new matter, as required by 37 C.F.R. 1.821(e) or 1.821(f) or 1.821(g) or 1.825(b) or 1.825(d).

For questions regarding compliance to these requirements, please contact:

For Rules Interpretation, call (703) 308-4216 or (703) 308-2923
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